



97084-00026

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of  
DIMITRI M. DONSKOY, ET AL.

U.S. Patent No.: 6,301,967

Issued: October 16, 2001

Reissue Serial No.: 10/686,515

Reissue Filing Date: October 15, 2003

For: METHOD AND APPARATUS FOR  
ACOUSTIC DETECTION AND  
LOCATION OF DEFECTS IN  
STRUCTURES OR ICE ON  
STRUCTURES

Group Art Unit: To be assigned.

Examiner: To be assigned.

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**INFORMATION DISCLOSURE STATEMENT**

Dear Sir:

In accordance with the provisions of 37 C.F.R. Sections 1.97 and 1.98, applicants and their attorney respectfully request that the following patents and printed publications, copies of which are attached hereto, be made of record in the official United States Patent and Trademark Office file relating to the above-identified re-issue application. The citations of these patents and publications should not be construed as an admission that they constitute prior art with respect to the present invention.

### U.S. Patents.

3,705,381	4,689,993	5,425,272
3,867,836	4,944,185	5,456,114
3,898,840	5,024,090	5,520,052
4,233,843	5,144,838	5,528,924
4,281,547	5,170,666	5,557,969
4,381,674	5,179,860	5,621,400
4,445,361	5,206,806	5,650,610
4,461,178	5,214,960	5,736,642
4,502,329	5,284,058	5,748,091
4,611,492	5,355,731	5,823,474

### Publications

A.S. Korotkov, et al., "Variations of Acoustic Nonlinear Parameters with the Concentration of Defects in Steel", Institute of Applied Sciences, Russian Academy of Sciences, Nizhnii Novgorod, Russia, Acoustic Physics, Vol. 40, No.1, 1994, pp. 71-74

V. Yu. Zaitsev, et al., "Nonlinear Interaction of Acoustical Waves Due to Cracks and Its Possible Usage for Cracks Detection", Institute of Applied Physics, Russian Academy of Science, Nizhny Novgorod, Russia, Journal of Vibration and Control, 1995, pp. 335-344

I. Yu. Belyayeva, "Tomography of Elastic Nonlinear Parameters of Rocks in Problems of Seismology and Seismic Prospecting", Institute of Applied Physics, Russian Academy of Sciences, N. Novgorod, Physics of the Solid Earth, Vol. 30, No. 12, July 1995, pp.1064-1071

A.M. Sutin, et al., "Nonlinear Acoustic Methods of Crack Diagnostics", Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Radiophysics and Quantum Electronics, Vol. 38, Nos. 3-4, 1995, pp. 109-120

Veniamin E. Nazarov, et al., "Nonlinear Acoustics of Micro-inhomogeneous Media", Institute of Applied Physics, Academy of Sciences of the USSR, Physics of the Earth and Planetary Interiors, 1998, pp. 65-73

Korotkov, et al., "Nonlinear Vibro-Acoustic Method for Diagnostics of Cracks in Construction Materials", Acoustical Society of America, Vol. 97, No. 5, Pt. 2, May 1995, pp. 3377

V.V. Kazakov, et al., "Nonlinear Acoustic Method of Pulsing Location of Cracks", Institute of Applied Physics of RAS, Nizhny Novgorod, 1998, pp. 183-186

Alexander Sutin, "Nonlinear Acoustic Non-Destructive Testing of Cracks", Institute of Applied Physics, Russian Academy of Science, Acoustics in Perspective, 14<sup>th</sup> Intern. Symp. On Nonlinear Acoustics, China, 1996, pp. 328-333

O. Buck, et al., "Acoustic Harmonic Generation at Unbonded Interfaces and Fatigue Cracks", Rockwell International Science Center, Thousand Oaks, California, Appl. Phys. Lett. 33 (5), September 1, 1978, pp. 371-373

Alexander M. Sutin, et al., "Nonlinear Vibro- Acoustic Nondestructive Testing Technique", Eighth International Symp. On Nondestructive Characterization of Materials, Boulder, CO, 1997, pp.1-7

Dimitri M. Donskoy, et al., "A Nonlinear Acoustic Technique for Crack and Corrosion Detection in Reinforced Concrete", Eighth Int. Symposium on Nondestructive Characteristics, Boulder, Co, 1997, pp. 1-6

Dimitiri M. Donskoy, et al., "Vibro-Acoustic Modulation Nondestructive Evaluation Technique", Davidson Laboratory, Stevens Institute of Technology, Hoboken, NJ, Journal of Intelligent Material Systems and Structures, Vol. 9, September 1998, pp. 765-771

A.M. Sutin, et al., "Nonlinear Acoustic Methods for Crack and Fatigue Detection", Safety Diagnostics of Underwater Construction buy Using Acoustics, Seoul, Korea, 1995, pp. 43-45

A.S. Korotkov, et al., "Modulation of Ultrasound by Vibrations in Metal Constructions with Cracks", Institute of Applied Physics, Russian Academy of Science, Nizhy Novgrood, Russia, Acoustics Letter, Vol. 18, No. 4, 1994, pp. 59-62

Peter B. Nagy, "Fatigue Damage Assessment by Nonlinear Ultrasonic Materials Characterization", Department of Aerospace Engineering and Engineering Mechanics, University of Cincinnati, OH, Ultrasonics 36, 1998, pp. 375-381

Peter B. Nagy, et al., "Identification of Distributed Fatigue Cracking by Dynamic Crack-Closure", Progress in Quantative Nondestructive Evaluation, Vol. 14, New York, 1995, pp. 1979-1986

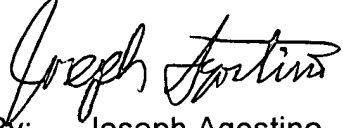
A. Korotkov, et al., "Nonlinear Vibro-Acoustic Method for Diagnostics of Metal", Advances in Non-Linear Acoustics, World Scientific, 1993, pg. 370-375

Applicants' attorney notes that all of the above-identified patents and publications are in the English-language, and therefore, no comments regarding their relevance to the present invention are deemed necessary. In order to facilitate the Examiner's citation of the patents and patent publications listed above, applicants' attorney has completed United States Patent and Trademark Office Form PTO-1449. The completed Form is attached hereto for the Examiner's convenience.

No fees are believed to be due in connection with the submission of this Information Disclosure Statement. If any such fees are due, the Examiner is hereby authorized to charge them to Deposit Account No. 501402.

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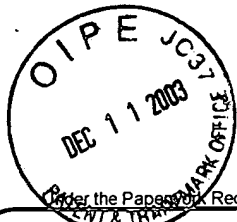
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STATEMENT BY APPLICANT**

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Sheet 1 of 2

**Complete if Known**

Application Number	6,301,967
Filing Date	Filed herewith
First Named Inventor	Dimitri M. Donskoy, et al.
Art Unit	To be assigned
Examiner Name	To be assigned
Attorney Docket Number	97084-00026

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
		US- 3705381	12/5/72	Pipkin	
		US- 3867836	2/25/75	Sessler, et al.	
		US- 3898840	8/12/75	McElroy	
		US- 4233843	11/18/80	Thompson, et al.	
		US- 4281547	8/4/81	Hinshaw, et al.	
		US- 4381674	5/3/83	Abts	
		US- 4445361	5/1/84	Moffett, et al.	
		US- 4461178	7/24/84	Chamuel	
		US- 4502329	3/5/85	Fukunaga, et al.	
		US- 4611492	9/16/86	Koosmann	
		US- 4689993	9/1/87	Slettemoen	
		US- 4944185	7/31/90	Clark, Jr., et al.	
		US- 5024090	6/18/91	Pettigrew, et al.	
		US- 5144838	9/8/92	Tsuboi	
		US- 5170666	12/15/92	Larsen	
		US- 5179860	1/19/93	Tsuboi	
		US- 5206806	4/27/93	Gerardi, et al.	
		US- 5214960	6/1/93	Tsuboi	
		US- 5284058	2/8/94	Jones	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				

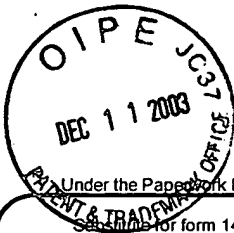
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**INFORMATION DISCLOSURE  
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First Named Inventor	Dimitri M. Donskoy , et al.
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		Number-Kind Code <sup>2</sup> (if known)			
		US- 5355731	10/18/94	Dixon, et al.	
		US- 5425272	6/10/95	Rhodes, et al.	
		US- 5456114	10/10/95	Liu, et al.	
		US- 5520052	5/28/96	Pechersky	
		US- 5528924	6/25/96	Wajid, et al.	
		US- 5557969	9/24/96	Jordan	
		US- 5621400	4/15/97	Corbi	
		US- 5650610	7/22/97	Gagnon	
		US- 5736642	4/7/98	Yost, et al.	
		US- 5748091	5/5/98	Kim	
		US- 5823474	10/20/98	Nunnally	
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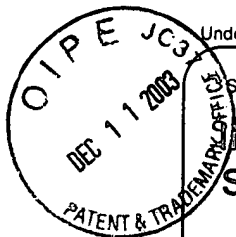
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Application Number	6,301,967
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First Named Inventor	Dimitri M. Donskoy
Art Unit	To be assigned
Examiner Name	To be assigned
Attorney Docket Number	97084-00026

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		Dimtri M. Donskoy, et al., "Vibro-Acoustic Modulation Nondestructive Evaluation Technique", Davidson Laboratory, Stevens Institute of Technology, Hooken, NJ, Journal of Intelligent Material Systems and Structures, Vol. 9, September 1998, pp. 765-771	
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Sheet 1 of 2

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**OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		A.S. Korotkov, et al., "Variations of Acoustic Nonlinear Parameters with the Concentration of Defects in Steel", Institute of Applied Sciences, Russian Academy of Sciences, Nizhnii Novgorod, Russia, Acoustic Physics, Vol. 40, No.1, 1994, pp. 71-74	
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